

CLAIMS

What is claimed is:

1. A method, comprising:

moving a reference voltage from a first voltage level to a second voltage level
wherein said second voltage level is closer to a received voltage level
than said first voltage level and wherein said reference voltage is
compared to said received voltage level to determine a digital state of
said received voltage level.

2. The method of claim 1 wherein said movement from said first voltage level to said
second voltage level takes place over a period of time that is on the order of the
one-half the minimum time said received voltage level is expected to remain in one
digital state.

3. The method of claim 2 further comprising: moving said reference voltage from said
second voltage level to said first voltage level wherein said first voltage level is closer
to said received voltage level than said second voltage level.

4. A method, comprising:

comparing a parameter of an input signal to a parameter of a reference to
determine a logical state of said input signal; and,
adjusting said parameter of said reference to reduce a difference between said
parameter of said reference and said parameter of said input signal.

5. The method of claim 4 wherein said difference between said parameter of said
reference and said parameter of said input signal maintains a nonzero minimum
difference.

6. A method, comprising:

comparing a parameter of an input signal to a parameter of a reference to
determine a logical state of said input signal wherein said parameter of
said input signal has a nominal value representing a logical low and a
nominal value representing a logical high; and,
adjusting said parameter of said reference to reduce a difference between said
parameter of said reference and said parameter of said input signal and
said parameter of said reference signal stays between said nominal value
representing said logical low and said nominal value representing said
logical high.

7. The method of claim 6 wherein said parameter of said reference is adjusted over a
period of time that greater than 0.25 and less than 1.5 times the minimum expected
period of time that said input signal will remain in a single logical state.

8. A method of receiving a digital signal, comprising:

comparing said digital signal to a reference voltage;
determining when said digital signal has changed from being greater than said
reference voltage to being less than said reference voltage; and,
reducing said reference voltage after said digital signal has changed from being
greater than said reference voltage to being less than said reference voltage.

9. The method of claim 8 wherein said reference voltage is reduced over a period of
time that is greater than an expected period of time for said digital signal to change
from one digital state to another.

10. A method of receiving a digital signal, comprising:

comparing said digital signal to a reference voltage;
determining when said digital signal has changed from being less than said
reference voltage to being greater than said reference voltage; and,
increasing said reference voltage after said digital signal has changed from
being less than said reference voltage to being greater than said
reference voltage.

11. The method of claim 10 wherein said reference voltage is increased over a period
of time that is greater than an expected period of time for said digital signal to change
from one digital state to another.

12. A method, comprising:

adjusting a reference between a first nominal reference level and a second
nominal reference level;
adjusting said reference between said second nominal reference level and said
first nominal reference level;
comparing a signal to said first nominal reference level when said signal is
closer to said first nominal reference level than said second nominal
reference level; and,
comparing said signal to said second nominal reference level when said signal
is closer to said second nominal reference level than said first nominal
reference level.

13. The method of claim 12 wherein said steps of comparing are used to initiate said steps of adjusting so that said reference becomes closer to said first nominal reference level after said signal has crossed said second nominal reference level and so that said reference becomes closer to said second nominal reference level after said signal has crossed said first nominal reference level.

14. A method of controlling a reference voltage, comprising:

tracking an input voltage with said reference voltage such that the voltage difference between an electrical high level and said reference voltage is increased by the change in said input signal as said input signal transitions from an electrical low level to said electrical high level and the voltage difference between said electrical high level and said reference voltage is decreased by increasing said reference voltage after said input signal transitions.

15. A method of controlling a reference voltage, comprising:

tracking an input voltage with said reference voltage such that the voltage difference between an electrical low level and said reference voltage is increased by the change in said input signal as said input signal transitions from an electrical high level to said electrical low level and the voltage difference between said electrical low level and said reference voltage is decreased by decreasing said reference voltage after said input signal transitions.

16. An apparatus, comprising:

means for tracking an input voltage with said reference voltage such that the voltage difference between an electrical high level and said reference voltage is increased by the change in said input signal as said input signal transitions from an electrical low level to said electrical high level and the voltage difference between said electrical high level and said reference voltage is decreased by increasing said reference voltage after said input signal transitions.

17. An apparatus, comprising:

means for tracking an input voltage with said reference voltage such that the voltage difference between an electrical low level and said reference voltage is increased by the change in said input signal as said input signal transitions from an electrical high level to said electrical low level and the voltage difference between said electrical low level and said reference voltage is decreased by decreasing said reference voltage after said input signal transitions.

18. A circuit, comprising:

means for moving a reference voltage from a first voltage level to a second voltage level wherein said second voltage level is closer to a received voltage level than said first voltage level and wherein said reference voltage is compared to said received voltage level to determine a digital state of said received voltage level.

19. A circuit comprising:

a differential receiver that compares an input signal and a reference signal;

and,

a reference signal control responsive to said differential receiver that adjusts said reference signal over a period of time to approach said input signal.

20. The circuit of claim 19 wherein said reference signal control comprises:

a saturating counter wherein a count direction of said counter is responsive to said differential receiver; and,

an analog MUX responsive to said saturating counter that selects one of a plurality of input voltages and outputs that one of said plurality of voltages to be used as said reference signal.

21. The circuit of claim 20 wherein said plurality of voltages are generated by a resistive ladder.

22. The circuit of claim 20 wherein said saturating counter is clocked by a clock signal having a period that is much less than the minimum expected time for said input signal to remain in one logical state.